REV. 1 JULY 27 1990 FINAL

REMEDIAL INVESTIGATION/ FEASIBILITY STUDY DATA MANAGEMENT PLAN

K.8

LENZ OIL SERVICE, INC.
LEMONT, ILLINOIS 161537

REVISION: 1

SUBMITTED BY:

LENZ OIL SETTLING RESPONDENTS

JULY 27, 1990

PREPARED BY:

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PROJECT NO. 9292

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1.0 INTRODUCTION

This Data Management Plan provides the procedures and format of documentation required for the Lenz Oil Remedial Investigation. Two general types of information, technical and management-related data, will require detailed and systematic management during the Remedial Investigation (RI) program. Technical data generated during the investigation will be recorded, filed, processed, and stored in a consistent manner to ensure reproducible results and ease of retrieval. Management related documents, including progress reports and technical memoranda, will be consistent in presentation and sufficiently comprehensive to communicate the progress and results of the RI.

2.0 DOCUMENTATION OF FIELD MEASUREMENTS AND OBSERVATIONS

All field measurements and observations will be recorded in both a field log book and on field data forms specific to each sampling media (e.g., soil gas, soil, ground water, etc.). These duplicate entries in the log book and data forms will enable cross-checking and proper tracking of all field events. Field measurements will include: pH, temperature, specific conductance, organic vapor concentrations, and geophysical measurements. Field observations will consist of: weather conditions, physical appearance of samples, all field tasks undertaken, and a list of all personnel at the site.

2.1 Field Log Book

Bound field log books will be started for the Lenz Oil RI and will remain dedicated to this project alone. A label affixed to each field log book will include the site name, site location, internal project number, and book number. All of these data will be written on the label with a permanent marker. Phone numbers of key project personnel and safety agencies such as the fire department, hospital, and police will be indicated in each field log book.

Each page in the field log book will be numbered and dated at the time of use. Daily entries will begin with a synopsis of weather conditions, field conditions, personnel present, and projected work tasks for that day. All field tasks completed and the status of tasks in progress will be recorded in the field log book. No erasing will be allowed and corrections will be made by drawing a line through the incorrect entry. All corrections of recorded data

will be initialed, and an explanation for the change will be provided.

Field activities will be summarized in the field log book to permit cross-checking with the field data forms. Entries will include all field measurements, sampling locations, the type of sample, and sampling personnel.

Photocopies of the field log book will be made on a regular basis and stored in the project files to ensure ease of retrieval by all project personnel.

2.2. Field Data Forms

Field measurements and detailed documentation of sampling will be recorded on standardized field data forms specific to each media sampled. Field data forms have been designed for the following sampling activities:

Field Data Form	Figure Number
Soil Gas Sampling	2-1
Sediment and Soil Sampling	2-2
Surface Water Sampling	2-3
Ground Water Sampling	2-4
Geologic Drill Log	2-5

The field data forms will identify sampling personnel, the location of the sample, the type of sample, and field measurements such as temperature, pH, or specific conductivity. This sample specific

FIGURE 2-1
LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NUMBER 9292

SOIL GAS SAMPLING
FIELD DATA FORM

SAMPLE I.D.: _____ DATE: _____ TIME: _____

SAMPLE LOCATION: _____

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

CHARCOAL TUBE LOT NO: _____

PROBE DEPTH: _____ (in)

START TIME: _____

FINISH TIME: _____

ELAPSED TIME: _____ (min)

SAMPLING FLOW RATE: _____ (Lpm)

VOLUME SAMPLED: _____ (liters)

HNu READING: _____ (ppm)

OBSERVATIONS: _____

_____

_____

FIGURE 2-2

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NUMBER 9292

SEDIMENT AND SOIL SAMPLING
FIELD DATA FORM

SAMPLE I.D.: _____ DATE: _____ TIME: _____

SAMPLE LOCATION: _____

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

SAMPLING METHOD: _____

SAMPLE DEPTH: _____ To _____

SAMPLE CONTAINER:	VOLUME:	PRESERVATIVE:
_____	_____	_____
_____	_____	_____
_____	_____	_____

HEADSPACE HNu READING: _____ (ppm)

SOIL DESCRIPTION: _____

_____

OBSERVATIONS: _____

_____

FIGURE 2-3

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO.: 9292

SURFACE WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: _____ DATE:_____ TIME: _____

SAMPLE LOCATION: _____

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

SAMPLE TYPE _____

AVERAGE DEPTH OF FLOW _____ WIDTH OF FLOW ____ FLOW VELOCITY ____

ESTIMATED FLOW RATE (gpm) _____

SAMPLING METHOD _____

SAMPLE VOLUME _____

FIELD ANALYSES: WATER TEMP (°F) _____

SPEC. COND (umhos/cm) _____

pH _____

LABORATORY ANALYSES: _____

_____

METALS SAMPLE FILTERED IN FIELD? YES _____ NO ____

OBSERVATIONS: _____

_____

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM

SAMPLE I.D.: _____ DATE: _____ TIME: _____

SAMPLERS:	AFFILIATION:	OBSERVERS:	AFFILIATION:
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

WELL NUMBER: _____ TOTAL DEPTH: _____(ft) I.D.: _____(in)

MATERIAL: _____ SCREENED INTERVAL: ____-_____ (ft)

WATER LEVEL TO TOP OF CASING (ft)

_____

PRE-PURGE: _____ POST-PURGE: _____ SAMPLING: _____

THICKNESS OF WATER COLUMN: _____(ft) CASING VOLUME: _____(gal)

PURGING METHOD: _____ SAMPLING METHOD: _____

STABILIZATION TEST

_____

Time	pH	Conductance (umhos/sq cm)	Temperature (deg F)	Cumulative Volume (gal)
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

FIGURE 2-4

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

GROUND WATER SAMPLING
FIELD DATA FORM
(Continued)

SAMPLE CONTAINER	VOLUME	PRESERVATIVE/PREP.
_____	_____	_____
_____	_____	_____
_____	_____	_____

METALS SAMPLE FILTERED IN FIELD? YES _____ NO ____

OBSERVATIONS: _____

_____

_____

ERM - North Central, Inc.
Environmental Resources Management

GEOLOGIC DRILL LOG

PROJECT	PROJECT NUMBER	SHEET NO.	HOLE NO.
		1 OF 4	

SITE	COORDINATES	ANGLE FROM HORIZ	BEARING
		Vertical	------

BEGUN	COMPLETED	DRILLER	DRILLING EQUIPMENT	BORING DIA.	TOTAL DEPTH

CORE RECOVERY (FT./%)	CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK
/					▼ / ▼ /	/

SAMPLE DEVICE	CASING LEFT IN HOLE: DIA./LENGTH	LOGGED BY:

Samples/R. Core				Containment Screening							
Sample No: Time	Rec. (ft)	Length(ft)	Blow Count RQD(%)	Amb. Air* VOC(ppm)	Sample ** VOC(ppm)	Visual Observ.	LAYER ELEV. DEPTH	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
								5				
								10				
								15				

CONTAMINANT SCREENING NOTES	SITE	HOLE NO.

ERM - North Central, Inc.
Environmental Resources Management

PROJECT

PROJECT NUMBER | SHEET NO. 2 OF 4 | HOLE NO.

GEOLOGIC DRILL LOG

Samples/R. Core				Contaminant Screening							
Sample # Time	Rec. (ft)	Length (ft)	Blow Cnt RQD(%)	Amb Air* VOC(ppm)	Sample** VOC(ppm)	Visual Observ.	LAYER ELEV. DEPTH	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
								25			
								30			
								35			
								40			

ERM - North Central, Inc.
Environmental Resources Management

GEOLOGIC DRILL LOG

PROJECT	PROJECT NUMBER	SHEET NO.	HOLE NO.
		3 OF 4	

Samples/R. Core				Contaminant Screening								
Sample # Time	Rec. (ft)	Length (ft)	Blow Cnt RQD(%)	Amb Air* VOC(ppm)	Sample** VOC(ppm)	Visual Observ.	LAYER ELEV. DEPTH	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
								50			
								55			
								60			
								65			

ERM - North Central, Inc.
Environmental Resources Management

GEOLOGIC DRILL LOG

PROJECT | PROJECT NUMBER | SHEET NO. 4 OF 4 | HOLE NO.

Samples/R. Core				Containment Screening							
Sample # Time	Rec. (ft)	Length (ft)	Blow Cnt RQD(%)	Amb Air* VOC(ppm)	Sample** VOC(ppm)	Visual Observ.	LAYER ELEV. DEPTH	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
							70.0			End of Boring	
								75			
								80			
								85			
								90			

information will be cross-checked with the field log book to ensure accurate documentation of each sample or field measurement.

As with the field log book, any corrections in the field data forms will be made by drawing a single line through the incorrect entry and initialing the correction. An explanation of the correction will be provided. Photocopies of the field data forms will be made on a regular basis and stored in the project files.

3.0 SAMPLE IDENTIFICATION AND CHAIN-OF-CUSTODY DOCUMENTATION

All field samples will be identified with sample identification labels, and sample custody information will be recorded on the following forms: (1) chain-of-custody, (2) sample analysis request, and (3) sample tracking.

3.1 Sample Identification Label

Sample identification labels will consist of gummed paper labels that include the following information:

- Sample Number
- Name of Collector
- Affiliation of Collector
- Date and Time of Collection
- Requested Analysis

A written description of the requested analysis will be recorded on the sample label and on the Chain-of-Custody Form to minimize the chance of conducting an incorrect analytical test on specific samples. Information from the sample identification labels will be recorded in the field log book to document all laboratory samples.

3.2 Chain-of-Custody Record

To provide documentation necessary to trace sample possession from the time of collection to the time of receipt by the analytical laboratory, a chain-of-custody record will be completed and accompany each shipment of sample(s) to the laboratory. An example of a chain-of-custody record is shown on Figure 3-1. Photocopies

FIGURE 3-1

ERM-North Central, inc.

Sample Chain of Custody

W.O.No.:	Project Name:
Sampler:	

ERM Sample Number	Date	Time	COMP	GRAB	Station Location	Number of Containers							Remarks

Sample Relinquished by:	Date	Time	Sample Received by:	Date	Time	Reason for Transfer

COPIES: White & Yellow copies accompany sample shipment to laboratory. Yellow copy retained by laboratory. White copy to be returned to ERM for files. Pink copy retained by sampler. Gold copy extra copy as needed

of the chain-of-custody records will be stored in the project files.

Custody seals will be placed on shipping containers so that the seal will have to be broken in order to gain access to the samples. These seals will ensure the detection of any tampering with samples during shipment to the analytical laboratory.

3.3 Sample Analysis Request Form

A sample analysis request form will accompany each shipment of samples to the analytical laboratory. This form will specify the requested analyses for all samples listed on the chain-of-custody record. A description of the requested analysis will be included on the sample analysis request form. An example of a sample analysis request form is shown on Figure 3-2.

Photocopies of the sample analysis request forms will be stored in the project files.

3.4 Sample Tracking Form

A standardized sample tracking form will be completed to establish sample custody prior to shipment to the laboratory and to document specific sample preservation methods. Figure 3-3 is an example of the sample tracking form.

Photocopies of the sample tracking forms will be stored in the project files.

FIGURE 3-2
SAMPLE ANALYSIS REQUEST FORM

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

ERM-NORTH CENTRAL, INC.
102 WILMOT ROAD, SUITE 300
DEERFIELD,IL 60015
(708) 940-7200

CORRESPONDING CHAIN-OF-CUSTODY RECORD NUMBER: _____

SAMPLERS: _____

SAMPLE NUMBER (From Label)	DATE	SAMPLE TYPE	REQUESTED ANALYSIS

FIGURE 3-3
SAMPLE TRACKING FORM

LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292

SAMPLE NUMBER (From Label)	DATE	SAMPLE TYPE	PRESERVATIVE/PREP	SAMPLERS INITIAL

4.0 DOCUMENT CONTROL AND FILING SYSTEMS

A data storage and information system will be implemented to prevent the loss or misinterpretation of data collected during the RI. The system will screen data to identify outliers, organize and sort data into an appropriate storage files, and provide secure storage of project files.

4.1 Data Screening and Validation

All data received from the analytical laboratory will be screened and validated to eliminate values that are: (1) associated with laboratory or sampling contamination, (2) not significantly different than background values, or (3) not within acceptable quality control limits established by the U.S. Environmental Protection Agency (USEPA) Contract Laboratory Program. Any data covered by these criteria will be assigned quality assurance "labels" that indicate the basis for possible exclusion from the RI data base. The final determination concerning which data is excluded will be made during the Endangerment Assessment of the RI.

4.2 Data Organization and Storage

All data gathered or generated during the RI will be organized and stored under specific file headings to enable ease of retrieval and to prevent the loss or misinterpretation of data. File headings will be structured under major project tasks that are identified in the site Work Plan. Information that can be readily tabulated, such as analytical data or field measurements, will be entered into computerized spreadsheets and stored on floppy disks. In addition to these computer files, copies of the original raw data will also

be stored in project files. All information stored under each file heading will be sequentially numbered and stored in chronological order.

4.3 Data and Document Security

The permanent file maintained for the project will be stored in the office of the senior project geologist to restrict unauthorized access. No files will be removed from this office without the knowledge of and approval from the senior project geologist.

Any data or information stored in computerized files will be duplicated on back-up floppy disks to prevent the accidental loss of information. The back-up disks will be stored in a separate location from the project files.

5.0 QUALITY ASSURANCE/QUALITY CONTROL DOCUMENTATION

Information and data generated by the Quality Assurance/Quality Control (QA/QC) program will be organized and managed by a specific QA/QC data management system. Quality Assurance procedures and checks will be used to ensure reliable field measurements, proper collection and integrity of samples, and accurate laboratory analysis of samples.

5.1 Field Measurement and Sampling Documentation

Quality Assurance documentation for field measurements and sample collection will consist of instrument calibration and maintenance checklists, and field audits of sampling and decontamination procedures.

Instruments used to obtain field measurements (e.g., pH meter, conductivity meter, HNu photoionization meter, etc.) will be calibrated on a daily basis. Calibration information will be recorded in a specific log book dedicated to maintenance of field instruments. Preventive maintenance for field instruments will be performed on a weekly basis and documented in the same field instrument log book.

A specific audit checklist will be used to conduct field audits of sampling and decontamination procedures. Audits will be conducted by the field team leader on a weekly basis, with copies of the audit checklist stored in the project files. An example of the sampling and decontamination audit checklist is shown on Figure 5-1.

FIGURE 5-1
LENZ OIL SITE REMEDIAL INVESTIGATION
PROJECT NO: 9292
SAMPLING AND DECONTAMINATION AUDIT CHECKLIST

SAMPLE I.D.: _____ DATE: _____ TIME: _____

SAMPLE LOCATION: _____

SAMPLERS: _____

AUDITOR: _____

SAMPLE TYPE: / SOIL GAS / SOIL / GROUND WATER /

SAMPLING METHODOLOGY: _____

_____

_____

NONCONFORMITIES WITH SAMPLING PLAN: _____

_____

_____

DECONTAMINATION PROCEDURES: _____

_____

_____

NONCONFORMITIES WITH Q.A.P.P.: _____

_____

CORRECTIVE ACTIONS: _____

_____

_____

5.2 Laboratory Quality Assurance/Quality Control Documentation

The analytical laboratories Pace Laboratory and Applied Research and Development Laboratory) will follow all Quality Assurance/Quality Control procedures required by USEPA's Contract Laboratory Program (CLP). All documentation required by the CLP QA/QC program will be submitted with the analytical laboratory reports. This information will be organized and stored under a separate heading for laboratory QA/QC in the project files.

6.0 DOCUMENTATION FOR HEALTH AND SAFETY PROGRAMS

Data management requirements for the Health and Safety programs of the RI include: (1) documentation of personnel training, (2) safety and monitoring logs, (3) reports of nonconformity with the Health and Safety Plan, and (4) reports of any corrective action taken.

A copy of the Health and Safety Plan will be issued to each member of the field team, kept in the field team leader's file, and stored in the project files. All project personnel will be required to attend a safety training program and sign the safety certification form shown in Figure 6-1. Copies of the signed Safety Certification Forms will be stored in the project files.

A site safety meeting will be held at the beginning of each new task during field activities of the RI. A safety meeting log sheet, shown in Figure 6-2, will be completed at each meeting, and copies will be stored in the project files.

The site safety officer will maintain a daily log to record field monitoring for organic vapors and protective equipment utilized by site personnel. Any nonconformities with the Health and Safety Plans and corrective action taken will also be recorded in the site safety officer's daily log. This log will be recorded in a field log book dedicated to Health and Safety issues.

Medical monitoring for field personnel will consist of annual physicals conducted at an occupational and environmental health clinic. Health records for field personnel will be maintained in their respective employee files.

FIGURE 6-1

ERM-NORTH CENTRAL, INC.

PERSONNEL SAFETY CERTIFICATION FORM

Safety Certification

All project personnel are required to make the following certification prior to conducting work at the Lenz Oil site.

I, _____, certify that:

1. I have read and understand the Project Safety Plan;

2. I will abide by the provisions of the Project Safety Plan; and

3. I have attended the Project Safety Training program provided by ERM-North Central.

_____
Signature

_____
Date

FIGURE 6-2
SITE SAFETY MEETING LOG

Facility: _____

Date: _____ Time: _____ Job Number: _____

Customer: _____ Address: _____

Specific Location: _____

Type of Work: _____

Chemicals Used: _____

SAFETY TOPICS PRESENTED

Protective Clothing/Equipment: _____

_____

Chemical Hazards: _____

_____

Physical Hazards: _____

_____

Emergency Procedures: _____

_____

Hospital/Clinic: _____ Phone:( ) _____ Paramedic Phone:( ) _____

_____

Hospital Address: _____

Special Equipment: _____

_____

Other: _____

ATTENDEES

NAME PRINTED	SIGNATURE
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Meeting conducted by: _____ _____
NAME PRINTED SIGNATURE

SUPERVISOR: _____ MANAGER: _____

7.0 DATA MANAGEMENT FOR INSTITUTIONAL ISSUES

Data management for institutional issues will include the documentation of actions related to site access, correspondence with regulatory agencies, and community relations planning.

7.1 Site Access and Security

All activities related to site access and security will be documented and stored in the project files. After control of site access has been established a visitor log will be maintained to document all personnel entering the site. Photocopies of this log will be made periodically and stored in the project files.

7.2 Correspondence With Regulatory Agencies

Copies of all correspondence with the Illinois EPA and USEPA, including monthly project status reports and technical memoranda, will be stored under separate headings in the project files. Additionally, a telephone and verbal conversation log will be maintained to document any contact with regulatory agencies.

7.3 Community Relations

Any actions taken in accordance with the Article XX of the Consent Agreement, will be documented and stored in the project files. This information will include any actions designed to inform the public about the progress and findings of the RI, as well as the corresponding public comments.

8.0 PROJECT TRACKING

To manage and evaluate the progress of the RI, the following project tracking reports will be submitted on a periodic basis: (1) monthly progress reports on the 10th business day of each month following the commencement of the work detailed in the Work Plan, and (2) technical memoranda reporting the results of each significant RI task.

8.1 Monthly Progress Reports

The monthly progress report will briefly outline the following items: (1) progress made during the reporting period, (2) problems encountered and proposed solutions, (3) deliverables submitted, (4) analytical results, (5) percent project completion, and (6) the project schedule. An example monthly progress report is shown on Figure 8-1.

8.2 Technical Memoranda

Technical memoranda summarizing the results of the RI will be submitted upon completion of each major project task. The format of each technical memorandum will vary, depending on the nature of the task and type of deliverables (i.e., geologic cross-sections, contour maps, laboratory data, etc.).

FIGURE 8-1

MONTHLY PROJECT STATUS REPORT FORMAT

LENZ OIL SITE REMEDIAL INVESTIGATION

PROJECT 9292

REPORT NUMBER:_____

REPORTING PERIOD (Month, Year): _____

PREPARED BY: _____

DATE: _____

1. Progress Made This Reporting Period - Description of progress made during the reporting period.

2. Problems Encountered and Recommended Solutions - Problems encountered and recommendations including technical, cost, and scheduling implications for resolution.

3. Deliverables Submitted - Deliverables completed and submitted, dates of anticipated submittals, and reasons if due dates have been (or need to be) revised.

4. Analytical Results - Summary of available analytical data, number of samples submitted, and expected turnaround time.

5. Percent Complete - Level of technical completion achieved, reported as percent complete for each task and as a single percentage of the total RI.

6. Schedule - Agreed upon date that deliverables are due and actual date deliverables were or are planned to be submitted. Explanation of any delays encountered.